

REMARKS/ARGUMENTS**Status of Claims:**

Claims 1-20 are pending in the subject application.

Claims 9-14 were allowed.

Claims 1-4, 17, and 18 were rejected.

Claims 5-8, 15, 16, 19, and 20 were objected to.

By this amendment:

Claims 1-20 were amended. The word “broadband” replaces “variable length” in the preamble of the claims. Antecedent basis for the amendment is found in the title, and in the specification as originally filed on page 12, lines 51-54.

Claim 17 was amended to include “to change the frequency of operation.” Antecedent basis for the amendment is found in the specification as originally filed on pages 16-17, lines 152-166.

Patent Office rejection of claim 17 under 35 U.S.C. § 102(b):

Claim 17 was rejected under 35 U.S.C. § 102(b) as being anticipated by Lamensdorf (U.S. Pat. No. 5,565,879).

Applicants’ response to rejection of claim 17 under 35 U.S.C. § 102(b):

Claim 17 was amended to clarify that the variable length antenna is a broadband antenna and that the electromagnetic beam decouples the antenna segments to change the antenna’s

frequency of operation. Antecedent basis for amended claim 17 is found in the title and in the specification as originally filed on pages 16-17, lines 152-166.

Applicants respectfully traverse the §102(b) rejection of claim 17. MPEP § 2131 provides:

“A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described in a single prior art reference.” *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). “The identical invention must be shown in as complete detail as contained in the ... claim.” *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989).

In Lamensdorf, electromagnetic energy is sequentially coupled to each of the switches and allows for beam steering through 360 degrees or any desired sector. In proposed amended claim 17, the electromagnetic beam is used to decouple the antenna segments to change the frequency of operation, which allows the antenna to function as a broadband antenna.

Because Lamensdorf does not disclose all of the elements in the invention described and claimed by the Applicants, Applicants assert that the 35 U.S.C. § 102(b) rejection of claim 17 is improper. Withdrawal of the rejection is, therefore, respectfully requested.

Patent Office rejection of claim 18 under 35 U.S.C. § 103(a):

Claim 18 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Lamensdorf.

Applicants' response to rejection of claim 18 under 35 U.S.C. § 103(a):

Applicants respectfully traverse the 35 U.S.C. § 103(a) rejection of claim 18 and disagree with the examiner's assertion that although Lamensdorf “differs from the claimed invention because it does not disclose the high frequency electromagnetic beam, however the limitation

high frequency beam is considered an obvious matter of design choice depending upon the desired characteristic of the antenna system.”

Reference is made to M.P.E.P. § 706.02, which states:

“After indicating that the rejection is under 35 U.S.C. § 103, the examiner should set forth in the Office action: (A) the relevant teachings of the prior art relied upon, preferably with reference to the relevant column or page number (s) and line number(s) where appropriate, (B) the difference or differences in the claim over the applied reference(s), (C) the proposed modification of the applied reference(s) necessary to arrive at the claimed subject matter, and (D) an explanation why one of ordinary skill in the art at the time the invention was made would have been motivated to make the proposed modification.”

The rejection is inconsistent with the requirements in M.P.E.P. § 706.02 because there is no *prima facie* case of obviousness recited in the Office action in that there is no citation of any suggestion in the art for modifying the teachings of Lamensdorf. To decouple an antenna segment in the claimed invention, the intensity of the electromagnetic beam must be sufficient to overwhelm any rf signal on the antenna at the point of beam illumination. See Specification, page 17, lines 161-163. Applicants assert that the 35 U.S.C. § 103(a) rejection of claim 18 is improper. Withdrawal of the rejection is, therefore, respectfully requested.

Patent Office rejection of claims 1-4 under 35 U.S.C. § 103(a):

Claims 1-4 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Hsu, et al. (U.S. Pat. No. 6,417,807).

Applicants' response to rejection of claims 1-4 under 35 U.S.C. § 103(a):

Applicants respectfully traverse the 35 U.S.C. § 103(a) rejection of claims 1-4. The rejection is inconsistent with the requirements in M.P.E.P. § 706.02 because there is no *prima*

facie case of obviousness recited in the Office action in that there is no citation of any suggestion in the art for modifying the teachings of Hsu et al.

In rejecting claims 1-4, the examiner states that although Hsu et al. does not disclose the switching rate of the switches, “the switching rate is considered an obvious matter of design choice depending upon the desired characteristic of the antenna system.”

Contrary to the examiner’s assertion, the switching rate is not an obvious matter of design choice. With a switching rate of greater than two times the highest of the plurality of frequencies, unexpected results occurred. Thus, when the required switching rate is met, the claimed invention functions under a new principle of operation – that is, the variable length antenna functions as a broadband antenna. See Specification, page 12, lines 51-54.

Because of these dissimilarities between the teaching of Hsu et al. and the invention described and claimed by the Applicants, Applicants assert that the 35 U.S.C. § 103(a) rejection of claims 1-4 is improper. Withdrawal of this rejection is, therefore, respectfully requested.

Patent Office objections to claims 5-8, 15, 16, 19, and 20:

~~Claims 5-8, 15, 16, 19, and 20 were objected to as being dependent upon a rejected base claim,~~

but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Applicants’ response to objections to claims 5-8, 15, 16, 19, and 20:

Applicants have requested withdrawal of rejections of claims 1-4, 17, and 18 and assert that claims 5-8, 15, 16, 19, and 20 are, thus, dependent on allowable base claims.

Conclusion:

Applicants have amended the application in anticipation of a favorable reconsideration and examination.

Respectfully submitted,

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